

CLAIMS

1. A method of build up welding to a thin-walled portion of a workpiece, comprising;

5       a jig-mounting step (A) for installing a jig to the thin-walled portion of the workpiece to form a recess, wherein the jig is manufactured from a material with a higher heat-resisting temperature than the heat-resisting temperature of the molten metal and a satisfactorily large  
10   heat capacity, and the recess is to store the molten metal in a surfaced portion in the vicinity of the thin-walled portion of the workpiece,

      a preheating step (B) for preheating the workpiece and the jig to a predetermined temperature under the condition  
15   with the jig installed,

      a build up welding step (C) for continually build up welding to the thin-walled portion of the workpiece and forming weld beads on a surfaced portion, and

      a jig-removing step (D) for removing the jig after the  
20   weld beads solidify completely.

2. The method of build up welding the thin-walled portion of a workpiece, specified in Claim 1, wherein the jig manufactured from the material with a satisfactorily large heat capacity comprises a ceramic jig.

25       3. The method of build up welding to the thin-walled portion of a workpiece, specified in Claim 1, wherein the

jig manufactured from the material with a satisfactorily large heat capacity has a satisfactorily large heat capacity to reduce the cooling rate at the thin-walled portion after the build up welding process.

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10 portion of the workpiece, and an outer-frame segment that encloses and holds the plurality of the closely fitting segments in an integrated manner.

5. The method of build up welding to the thin-walled portion of a workpiece, specified in Claim 1, wherein the  
15 material of the workpiece is a TiAl alloy.

6. The method of build up welding the thin-walled portion of a workpiece, specified in Claim 1, wherein the thin-walled portion of the workpiece is the tip of a turbine blade.